

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellant: Woessner
Serial No.: 10/501,591
Filed: April 12, 2005
Group Art Unit: 1791
Examiner: Rogers, Martin K.
Title: METHOD OF FORMING A HOSE

Mail Stop Appeal Brief- Patents
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

APPEAL BRIEF

Dear Sir:

Subsequent to the filing of the Notice of Appeal on May 24, 2010, Appellant hereby submits its brief. As the Appeal Brief fee has already been paid, no additional fees are due. Any additional fees or credits may be charged or applied to Deposit Account No. 50-1482 in the name of Carlson, Gaskey & Olds, P.C.

REAL PARTY IN INTEREST

The real party in interest is Cooper-Standard Automotive Inc., the assignee of the entire right and interest in this Application.

RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

STATUS OF CLAIMS

Claims 1-4, 7, 11-17, 26 and 28-36 are pending in this application. Claims 30 and 33 stand rejected under 112, first paragraph. Claims 1-4, 7, 11-17, 26 and 28-36 stand finally rejected under 103(a). Claims 5, 6, 8-10, 18-25 and 27 have been cancelled. Appellant filed an amendment on October 6, 2009, which incorporated the features of claims 5 and 6 into claim 1 and cancelled claims 5 and 6. The Examiner stated in the Advisory Action mailed October 15, 2009 that this amendment would be entered for purposes of appeal. Therefore, the rejection of Claims 1-4, 7, 11-17, 26 and 28-36 are being appealed.

STATUS OF AMENDMENTS

The Examiner stated that the amendment filed October 6, 2009 would be entered for purposes of appeal.

SUMMARY OF CLAIMED SUBJECT MATTER

As shown in Figures 1 and 2, this invention relates to a method of forming a hose 12 into a desired shape including the steps of cutting a hose 12 having a first end 16 and an opposing second end 30 into a desired length and drawing the desired length of the hose 12 into a forming tube 14 having an inner surface that defines an inner passage that defines a desired tube shape (page 2, lines 8 to lines 14 and lines 29 to 30). The step of drawing occurs after the step of cutting the hose 12 (page 3, lines 8 to 14). The forming tube 14 includes a vacuum end 22 and a loading end 18 (page 3, lines 8 to 9 and 15 to 16), and the steps of drawing the hose 12 includes inserting the first end 16 of the hose 12 into the loading end 18 of the forming tube 14 and applying a vacuum to the vacuum end 22 of the forming tube 14 (page 3, lines 9 to 10 and lines 20 to 22). The method further includes the steps of positioning a vacuum endcap 20 on the vacuum end 22 of the forming tube 14 such that the first end 16 of the hose 12 contacts the vacuum endcap 20 and positioning a loading endcap 28 on the loading end 18 of the forming tube 14 such that the opposing second end 30 of the hose 12 contacts the loading endcap 28 (page 3, lines 15 to 16 and lines 26 to 31). The method further

includes the step of curing the desired length of the hose 12 into the desired shape while the hose 12 is located in the forming tube 14 (page 4, lines 1 to 2), finishing the first end 16 and the opposing second 30 of the hose 12 by the contact of the first end 16 and the opposing second end 30 against the vacuum end cap 20 and the loading endcap 28, respectively, (page 4, lines 6 to 9) during the step of curing, and removing the hose 12 having the desired shape from the forming tube 14 (page 4, lines 10 to 14). This basic structure is set forth in Claim 1.

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

- A. Are claims 30, 31 and 33 properly rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement?
- B. Are Claims 1, 13, 26, 30 and 33-36 properly rejected under 35 U.S.C. 103(a) based on Roberts et al. (US 2830622) in view of Roberts et al. (US 2897840)?
- C. Are Claims 2, 3 and 14 properly rejected under 35 U.S.C. 103(a) based on Roberts et al. ('622) in view of Roberts et al. ('840) and Akman et al. (US 4957687)?
- D. Is Claim 4 properly rejected under 35 U.S.C. 103(a) based on Roberts et al. ('622) in view of Roberts et al. ('840) and Voss et al. (US 3859408)?
- E. Are Claims 5-7 properly rejected under 35 U.S.C. 103(a) based Roberts et al. ('622) in view of Roberts et al. ('840) and Sadr (US 4865799)?
- F. Are Claims 11 and 12 properly rejected under 35 U.S.C. 103(a) based on Roberts et al. ('622) in view of Roberts et al. ('840) and Hoshishima et al. (US 5518035)?
- G. Is Claim 15 properly rejected under 35 U.S.C. 103(a) based on Roberts et al. ('622) in view of Roberts et al. ('840) and Torghele (US 4483815)?
- H. Is Claim 16 properly rejected under 35 U.S.C. 103(a) based on Roberts et al. ('622) in view of Roberts et al. ('840) and Houser (US 4325355)?
- I. Is Claim 17 properly rejected under 35 U.S.C. 103(a) based on Roberts et al. ('622) in view of Roberts et al. ('840) and Babbitt et al. (US 4512942)?

- J. Are Claims 28 and 29 properly rejected under 35 U.S.C. 103(a) as being unpatentable over Roberts et al. ('622) in view of Roberts et al. ('840) and of Sadr and Voss et al.?
- K. Are Claims 1 and 31-36 properly rejected under 35 U.S.C. 103(a) as being unpatentable over Logan et al. (US 4013101) in view of Roberts et al. ('622) and Roberts et al. ('840)?

ARGUMENTS

A. 35 USC 112, first paragraph, rejection of claims 30, 31 and 33.

Claim 30

The Examiner rejected claim 30 under 35 U.S.C. 112, first paragraph, as not complying with the written description requirement. The Examiner states that the claims are not described in the specification in a way as to reasonably convey that the inventor had possession of the invention. Figure 1 clearly shows that the forming tube is formed of a single component. MPEP 608.04(a) states that “[m]atter not in the original specification, claims, or drawings is usually new matter.” The relevant question is what the drawing discloses to one skilled in the art. If the drawing contains the necessary disclosure, it cannot be new matter and can form the basis of a valid claim. *In re Adolph Wolfensperger*, 49 C.C.P.A. 1075, 302 F.2d 950 (CCPA 1962). Figure 1 clearly supports this recitation, and the rejection is improper.

Claim 31

The Examiner rejected claim 31 under 35 U.S.C. 112, first paragraph, as not complying with the written description requirement. The Examiner states that the specification does not support the feature that there is “no support structure.” Applicant respectfully disagrees. The specification states that “the pressure on the inside and the outside of the hose 12 is equalized, preventing the hose 12 from collapsing during curing” (page 3, lines 15 to 17). Additionally, the specification states that a hollow plug 32 allows venting, preventing the hose 12 from collapsing during curing (page 5, lines 13 to 15). This would be a concern only if there was a lack of a support structure. Figures 1 and 2 also show no support structure. The claimed invention is supported.

Claim 33

The Examiner rejected claim 33 under 35 U.S.C. 112, first paragraph, as not complying with the written description requirement. The Examiner states that the claims are not described in the specification in a way as to reasonably convey that the inventor had possession of the invention. Figure 3 clearly shows that the inner surface of the hose is substantially smooth. MPEP 608.04(a) states that “[m]atter not in the original specification, claims, or drawings is usually new matter.” The relevant question is what the drawing discloses to one skilled in the art. If the drawing contains the necessary disclosure, it cannot be new matter and can form the basis of a valid claim. *In re Adolph Wolfensperger*, 49 C.C.P.A. 1075, 302 F.2d 950 (CCPA 1962). Figure 3 clearly supports this recitation, and the rejection is improper.

B. Obviousness of Claims 1, 13, 26, 30 and 33-36 based on Roberts et al. in view of Roberts et al.

Claims 1, 13, 26, 30 and 33, 34, and 36

Claims 1, 13, 26, 30 and 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roberts et al. (US 2830622) in view of Roberts et al. (US 2897840). Claim 1 has been amended to include the features of claims 5 and 6, and the Examiner stated that these amendments would be entered for purposes of appeal.

The rejection of the claims as amended are based on Roberts et al. in view of Roberts et al. and Sadr. The Examiner states that Roberts et al. ‘622 does not disclose a tube with a loading end and a vacuum end and the step of drawing the hose includes inserting the first end of the hose into the loading end of the forming tube. The Examiner states that Sadr discloses applying a vacuum to a vacuum end of a mold cavity to facilitate loading of a parison, and it would be obvious to employ this feature in the combination of Roberts et al. ‘622 and Roberts et al. ‘840. Appellant respectfully disagrees.

The claimed invention is not obvious. Roberts ‘622 discloses a hollow mandrel 10 with a center bore 11 with a plurality of passages 12, and an outer jacket 13 that extends for the full length.

A body 14 is disposed on the outer jacket 13 to be set into a final form (column 2, lines 24 to 40). Fluid pressure applied to the bore 11 in the mandrel 10 expands the body 14 slightly outwardly (column 2, lines 58 to 61). A mold 18 with a cylindrical molding cavity 19 is longitudinally split into two sections 18a and 18b (shown in Figure 5). The body 14 is removed from the mandrel 10 and located in to the mold 18 and inflated, forcing the body 14 outwardly (column 3, lines 1 to 18). As the mold 18 includes two sections 18a and 18b, there is no reason to employ a vacuum to draw the body 14 into the mold 18 to allow for easy placement as the mold 18 is in two parts.

Alternatively, as stated in column 4, lines 33 to 35, a cylindrical tube 24 could be used instead of the mold 18. In one example, the body 14 and the mandrel 10 are inserted into a mold 24 having a smooth inner bore 19a having a diameter conforming to an outer diameter of the hose 14 and being preferably slightly larger than the clamps so that the mandrel 10 can be readily inserted as shown in Figure 7. There is no reason to employ a vacuum in this situation as the mold 24 is already designed for easy insertion of the body 14. The vacuum would provide no additional function and there is no reason to make this modification. The claimed invention is not obvious.

Additionally, it would not be obvious to employ a second end plug in Roberts et al. '622. Roberts et al. '622 discloses that an end plug 20 is inserted into an end of the body 14 to allow the hose to be inflated from a suitable source (column 3, lines 4 to 9). A second end plug is not disclosed. Roberts et al. '622 does not disclose the need of a second end plug as the structure of the other end of the body 14 is not disclosed. For example, the other end of the body 14 could be attached to a continuous roll of body material (such as, for example, the structure of Voss et al.), which would eliminate the need of a second end plug. Nothing suggests that Roberts et al. '622 would benefit or need two endcaps.

Finally, neither reference discloses finishing the ends of a hose against endcaps during curing. The Examiner states that Roberts et al. '840 discloses end caps at both sides of a mold cavity to allow the interior of the hose to pressurize within the molding cavity, and one skilled in the art would appreciate that because the ends of the hose are completely within the molding cavity when they are positioned against the end caps, they will be cured during the heating step. Roberts et al. '840

discloses forming a hose by employing plugs 13 and 14 during a process of forming a corrugated wall 12b. The hose is then removed from a mold 17 and placed into a steam chamber S (shown in Figure 12) to cure the hose (column 4, line 73 to column 5, lines 12). The Examiner states that Roberts et al. '840 discloses that the hose can be partially or semi-cured in the mold to hold it in molded form. However, Roberts et al. '840 then discloses that the hose is removed from the mold and given its curved shape and supported in a steam chamber S. Therefore, the hose, including its ends, is cured and finished in the steam chamber S. The plug 13 and 14 are not used during the finishing process as the hose is removed from the mold 17 when the ends are being finished. That is, the plugs 13 and 14 are not used to finish the ends of the hose. Therefore, Roberts et al. '840 does not disclose positioning an end cap against each end of a hose during a step of curing to finish the ends as the ends are finished when the hose is in the steam chamber S and not when in contact with the plugs 13 and 14. Roberts et al. '622 also does not disclose two end caps. Neither reference discloses this feature, and therefore the combination does not suggest the invention.

Claim 35

The rejection of claim 35 is separately contested from the rejection of claims 1 et al. Claim 35 recites that a material of the hose defines an outermost layer of the hose. Neither Roberts et al. '622 nor Roberts et al. '840 discloses this feature. In both Roberts et al. '622, a wrapping 17 covers the body 14. In an elastomeric jacket 12 covers the inner layer 10 of the hose. Neither reference discloses this feature, and the claimed invention is not obvious in view of these references.

C. Obviousness of Claim 2, 3 and 14 based on Roberts et al. in view of Roberts et al. and Akman et al.

Claims 2, 3 and 14

Claims 2, 3 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable Roberts et al. '622 in view of Roberts et al.'840 and Akman et al. Claims 2, 3 and 14 depend on patentable independent claim 1 and are allowable for the reasons set forth above.

D. Obviousness of Claim 4 based on Roberts et al. in view of Roberts et al. and Voss et al.

Claim 4

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Roberts et al. '622 in view of Roberts et al. '840 and Voss et al. Claim 4 depends on patentable independent claim 1 and is allowable for the reasons set forth above.

E. Obviousness of Claims 5-7 based on Roberts et al. in view of Roberts et al. and Sadr.

Claims 5-7

Claims 5 and 6 have been cancelled and added to claim 1. Claim 7 depends on patentable independent claim 1 and is allowable for the reasons set forth above.

F. Obviousness of Claims 11 and 12 based on Roberts et al. in view of Roberts et al. and Hoshishima et al.

Claims 11 and 12

Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roberts et al. '622 in view of Roberts et al. '840 and Hoshishima et al. Claims 11 and 12 depend on patentable independent claim 1 and is allowable for the reasons set forth above.

G. Obviousness of Claim 15 based on Roberts et al. in view of Roberts et al. and Torghele.

Claim 15

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Roberts et al. '622 in view of Roberts et al. '840 and Torghele. Claim 15 depends on patentable independent claim 1 and is allowable for the reasons set forth above.

H. Obviousness of Claim 16 based on Roberts et al. in view of Roberts et al. and Houser.

Claim 16

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Roberts et al. '622 in view of Roberts et al. '840 and Houser. Claim 16 depends on patentable independent claim 1 and is allowable for the reasons set forth above.

I. Obviousness of Claim 17 based on Roberts et al. in view of Roberts et al. and Babbitt et al.

Claim 17

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Roberts et al. '622 in view of Roberts et al. '840 and Babbitt et al. Claim 17 depends on patentable independent claim 1 and is allowable for the reasons set forth above.

J. Obviousness of Claims 28 and 29 based on Roberts et al. in view of Roberts et al., Sadr and Voss et al.

Claims 28 and 29

Claims 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roberts et al. '622 in view of Roberts et al. '840, Sadr, and Voss et al. Claim 28 and 29 depend on patentable independent claim 1 and are allowable for the reasons set forth above.

K. Obviousness of Claims 1 and 31-36 based on Logan et al. in view of Roberts et al. and Roberts et al.

Claims 1 and 31-36

Claims 1 and 31-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Logan et al. (US 4013101) in view of Roberts et al. '622 and Roberts et al. '840. Claim 1 has been amended

to include the features of claims 5 and 6, which the Examiner stated would be entered for purposes of appeal, overcoming the rejection.

CONCLUSION

For the reasons set forth above, the rejection of all claims is improper and should be reversed. Appellant respectfully requests such an action.

Respectfully Submitted,

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CLAIM APPENDIX

1. A method of forming a hose into a desired shape, the method comprising the steps of:
cutting a hose into a desired length, said hose having a first end and an opposing second end;
drawing said desired length of said hose into a forming tube having an inner surface that defines an inner passage that defines a desired tube shape, wherein the step of drawing occurs after the step of cutting said hose, said forming tube including a vacuum end and a loading end, wherein the step of drawing said hose includes inserting said first end of said hose into said loading end of said forming tube and applying a vacuum to said vacuum end of said forming tube;
positioning a vacuum endcap on said vacuum end of said forming tube such that said first end of said hose contacts said vacuum endcap;
positioning a loading endcap on said loading end of said forming tube such that said opposing second end of said hose contacts said loading endcap;
curing said desired length of said hose into said desired shape while said hose is located in said forming tube;
finishing said first end and said opposing second of said hose by the contact of said first end and said opposing second end against said vacuum end cap and said loading endcap, respectively, during the step of curing; and
removing said hose having said desired shape from said forming tube.
2. The method as recited in claim 1 further comprising the step of holding said forming tube stationary.
3. The method as recited in claim 2 wherein a clamping block holds said forming tube stationary.

4. The method as recited in claim 1 further comprising the step of lubricating said hose before the step of drawing.
7. The method as recited in claim 1 wherein the step of removing said hose includes applying pressure to said vacuum end of said forming tube.
11. The method as recited in claim 1 including the step of flaring at least one of said first end and said opposing second end of said hose.
12. The method as recited in claim 11 wherein the step of flaring said at least one of said first end and said opposing second end of said hose includes inserting a plug into said at least one of said first end and said opposing second end of said hose, and said plug has an outer diameter greater than an inner diameter of said hose.
13. The method as recited in claim 1 wherein said hose is a polymer.
14. The method as recited in claim 1 wherein said forming tube is one of plastic, glass, Pyrex, ceramic, and metal.
15. The method as recited in claim 1 wherein the step of curing said hose includes submerging said hose and said forming tube in a hot fluid.
16. The method as recited in claim 1 wherein the step of curing said hose includes employing an electric wrap.

17. The method as recited in claim 1 wherein the step of curing said hose includes microwaving.
26. The method as recited in claim 1 wherein the step of curing occurs after the step of drawing, and the step of removing occurs after the step of curing.
28. The method as recited in claim 1 further including the step of lubricating said hose before the step of drawing, wherein the step of drawing said hose includes inserting said first end of said hose into said loading end of said forming tube and applying a vacuum to said vacuum end of said forming tube, and the step of removing said hose includes applying pressure to said vacuum end of said forming tube.
29. The method as recited in claim 28 wherein the step of curing occurs after the step of drawing, and the step of removing occurs after the step of curing.
30. The method as recited in claim 1 wherein the forming tube is formed of a single component.
31. The method as recited in claim 1 wherein there is no support structure inside the hose during the step of curing, and pressure inside the hose prevents the hose from collapsing.
32. The method as recited in claim 1 wherein pressure inside the hose prevents the hose from collapsing
33. The method as recited in claim 1 wherein an inner surface of the hose is substantially smooth.
34. The method as recited in claim 1 wherein an outer surface of the hose is substantially smooth.

35. The method as recited in claim 1 wherein a material of the hose defines an outermost layer of the hose.

36. The method as recited in claim 1 wherein the first end and the opposing second end of the hose are flush with the vacuum endcap and said loading endcap, respectively, during curing to create a flat surface.

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EVIDENCE APPENDIX

None

RELATED PROCEEDINGS APPENDIX

None

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